

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT						
NATURE OF CONVEYANCE:	ASSIGNMENT						
CONVEYING PARTY DATA							
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Alan ROTH</td> <td>06/28/2012</td> </tr> <tr> <td>Eric SOENEN</td> <td>06/28/2012</td> </tr> </tbody> </table>		Name	Execution Date	Alan ROTH	06/28/2012	Eric SOENEN	06/28/2012
Name	Execution Date						
Alan ROTH	06/28/2012						
Eric SOENEN	06/28/2012						
RECEIVING PARTY DATA							
Name:	Taiwan Semiconductor Manufacturing Co., Ltd.						
Street Address:	No. 8, Li-Hsin Road 6						
Internal Address:	Science-Based Industrial Park						
City:	Hsin-chu						
State/Country:	TAIWAN						
Postal Code:	300-77						
PROPERTY NUMBERS Total: 1							
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13546303</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13546303		
Property Type	Number						
Application Number:	13546303						
CORRESPONDENCE DATA							
Fax Number:	2156894905						
Phone:	215-979-1000						
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<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>							
Correspondent Name:	DUANE MORRIS LLP (TSMC) IP DEPARTMENT						
Address Line 1:	30 SOUTH 17TH STREET						
Address Line 4:	PHILADELPHIA, PENNSYLVANIA 19103-4196						
ATTORNEY DOCKET NUMBER:	2011.1263/1085.976						
NAME OF SUBMITTER:	Mark J. Marcelli						
Total Attachments: 2 source=EXECUTEDASSIGN#page1.tif source=EXECUTEDASSIGN#page2.tif							

CH \$40.00 13546303

Serial No. 13/546,303

filed July 11, 2012

ATTORNEY DOCKET NO.: 2011.1263/1085.976**ASSIGNMENT AND AGREEMENT**

For value received, we, **Alan ROTH and Eric SOENEN**, hereby transfer to **Taiwan Semiconductor Manufacturing Co., Ltd.**, with its principal place of business located at No. 8, Li-Hsin Road 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, Republic of China, and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to **VARIABLE PRECISION THERMAL SENSOR**, described in a non-provisional application claiming priority to U.S. Provisional Application S.N. 61/565,082 filed November 30, 2011, S.N. 61/564,940 filed November 30, 2011 and S.N. 61/565,306 filed November 30, 2011, and under any and all Letters Patent and any divisions, continuations, continuations-in-part, reexamination certificates, reissues, and extensions thereof, or claiming priority therefrom that may be granted in the United States for said inventions; and we also concurrently hereby sell, assign and transfer to Taiwan Semiconductor Manufacturing Co., Ltd. the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

We authorize Taiwan Semiconductor Manufacturing Co., Ltd. to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from us, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

We hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of Taiwan Semiconductor Manufacturing Co., Ltd. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

We request that any and all patents for said inventions be issued to Taiwan Semiconductor Manufacturing Co., Ltd. in the United States and in all countries foreign to the United States, or to such nominees as Taiwan Semiconductor Manufacturing Co., Ltd. may designate.

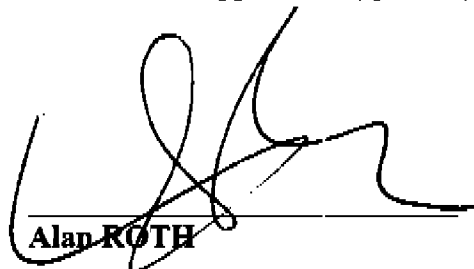
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We agree that, when requested, we shall, without charge to Taiwan Semiconductor Manufacturing Co., Ltd. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Inventor No. 1

Dated:

6/28/2012


Alan ROTH


Residence:

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Inventor No. 2

Dated:

6/28/2012


Eric SOENEN

Residence:

4501 Tortuga Cove, Austin, Texas 78731, United States of America